

This listing of claims will replace all prior versions, and listing, of claims in the application:

**Listing of Claims:**

Claims 1 and 2 cancelled herein, without prejudice.

Claim 3 (Amended) An interferometer, comprising:

- a beam splitter receiving a light beam and splitting the light beam into a first light beam and a second light beam;
- a scanning mirror having a sustainable oscillating movement, the scanning mirror having two opposing planar reflecting sides;
- a plurality of steering mirrors for reflecting the first light beam to one of the opposing planar reflecting sides, and the second light beam to the other one of the opposing planar reflecting sides, the beam splitter, scanning mirror and steering mirrors being provided in a first plane; and
- a tilt compensator and delay element having an odd number of mirrors including at least three mirrors, the mirrors being positioned to receive at least a portion of the first light beam and ~~receiving one of the first light beam and the second light beam, the tilt compensator and delay element reflecting the one of the first light beam and the second light beam out of the first plane and reflecting the one of the first light beam and the second light beam back into the first plane so as to provide tilt correction and to delay the one of the first light beam and the second light beam.~~

Claim 4 (original) The interferometer of claim 3, wherein the tilt compensator and delay element is positioned between one of the steering mirrors and the scanning mirror.

Claim 5 (original) The interferometer of claim 3, wherein the tilt compensator and delay element is positioned between a pair of the steering mirrors.

Claim 6 (original) The interferometer of claim 3, wherein the interferometer is a normal Genzel arrangement interferometer.

Claim 7 (original) The interferometer of claim 6, wherein the tilt compensator and delay element is positioned between one of the steering mirrors and the scanning mirror.

Claim 8 (original) The interferometer of claim 6, wherein the tilt compensator and delay element is positioned between a pair of the steering mirrors.

Claim 9 (original) The interferometer of claim 3, wherein the interferometer is a 1 axis correcting Genzel Michelson scanning interferometer.

Claim 10 (original) The interferometer of claim 9, wherein the tilt compensator and delay element is positioned between one of the steering mirrors and the scanning mirror.

Claim 11 (original) The interferometer of claim 9, wherein the tilt compensator and delay element is positioned between a pair of the steering mirrors.

Claim 12 (original) The interferometer of claim 3, wherein the interferometer is a Genzel Mach-Zehnder interferometer.

Claim 13 (original) The interferometer of claim 12, wherein the tilt compensator and delay element is positioned between one of the steering mirrors and the scanning mirror.

Claim 14 (original) The interferometer of claim 12, wherein the tilt compensator and delay element is positioned between a pair of the steering mirrors.

Claim 15 (New) The interferometer of claim 3, wherein the mirrors of the tilt compensator and delay element are positioned to reflect the first light beam about 90 degrees out of the first plane.

Claim 16 (New) The interferometer of claim 3, wherein the mirrors of the tilt compensator and delay element are positioned such that the first light beam is directed out of the first plane and back into the first plane when the first light beam is traveling from the beam splitter to the scanning mirror, and the first light beam is also directed out of the first plane and back into the first plane when the first light beam is traveling from the scanning mirror to the beam splitter.